Bakery 3.0
Taste and Nutrition, The Future Of Bakery
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Kerry

Bakery Journey
Bakery 1.0
Bread like Grandma used to make!

But then there was that pesky Nutrition
An expanding waistline story
Prevalence of Obesity Among U.S. Adults Aged 20-74

Obesity – Driver of Health Risks

Heart Disease
Cancer
Stroke
Diabetes

Derived from NHANES data (http://www.cdc.gov/nchs/data/nhsli/obesity_adult_09_10/obesity_adult_09_10.html#table1)
Health Focused

Consumers are looking to have a balanced approach to health and wellness, and want to have greater control through the choices they make and visibility of what they consume.

Top 10
Extremely to very important label claims in the U.S.

- Good Source of Antioxidants - 40%
- Heart Healthy - 41%
- Reduced/Low Sodium/Low Salt - 42%
- High Protein - 42%
- High Fiber - 43%
- Good Source of Fiber - 44%
- No Artificial Sweeteners - 44%
- No Preservatives - 45%
- Whole Grain - 48%

Very Aware Consumers

Between the media’s focus on the food industry and everyone’s ability to “google” an ingredient they don’t understand, we have a hyper aware society.
Is bread good for me?

- High in Sugar
- High in Salt
- Refined Flour
- Low in whole wheat and whole grains
- Gluten
- Overly Processed

Consumers Respond

<table>
<thead>
<tr>
<th>% Trying to Avoid</th>
<th>% Trying to Consume</th>
</tr>
</thead>
<tbody>
<tr>
<td>61%</td>
<td>64%</td>
</tr>
<tr>
<td>Added sugars</td>
<td>Protein</td>
</tr>
<tr>
<td>53%</td>
<td>60%</td>
</tr>
<tr>
<td>Sodium/salt</td>
<td>Fiber</td>
</tr>
<tr>
<td>50%</td>
<td>59%</td>
</tr>
<tr>
<td>Preservatives</td>
<td>Whole grains</td>
</tr>
<tr>
<td>44%</td>
<td>Potassium</td>
</tr>
<tr>
<td>Saturated fats</td>
<td>48%</td>
</tr>
<tr>
<td></td>
<td>Simple ingredients</td>
</tr>
<tr>
<td></td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>Omega-3 fats</td>
</tr>
<tr>
<td></td>
<td>37%</td>
</tr>
</tbody>
</table>
Bakery 2.0
A ‘Better for You’ Nutritious Bread

Bakery 2.0
Consumer and Industry Focus on Negative Nutrition

Retail Bakery Launches 2003-2013

<table>
<thead>
<tr>
<th>Feature</th>
<th>Launches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low/No/Reduced Fat</td>
<td>379</td>
</tr>
<tr>
<td>Low/No/Reduced Carbohydrate</td>
<td>733</td>
</tr>
<tr>
<td>Low/No/Reduced Calories</td>
<td>680</td>
</tr>
<tr>
<td>Low/No/Reduced Sugar</td>
<td>800</td>
</tr>
<tr>
<td>Low/No/Reduced Calories</td>
<td>1581</td>
</tr>
</tbody>
</table>

Source: Mintel GNPD
Bakery 2.0 Example

Whole grain fiber fortified sandwich bread that delivers 45% the DV of fiber

- Great nutritional benefits
- Strong bitter grain taste
- Too heavy and dense. Not fluffy.
- Not clean label – what are some of these chemicals?

Source: Influenster.com Consumer Ratings

HEALTH FOODS

"Do you have something that's good for you, but tastes like it's bad for you?"
Taste is #1
How much impact do these have on food/beverage purchase decisions?

Bakery 3.0
Taste & Nutrition working together
Attitudes Toward Bread, May 2016

- Bread rolls makes meals more enjoyable: 72%
- I enjoy trying new varieties of bread: 68%
- I enjoy trying breads or bread products from other cultures or regions: 62%
- I have been purchasing less bread recently: 73%
- I have been purchasing more bread recently: 85%

Source: Mintel

Oprah revealed she lost 26 lbs. on Weight Watchers and still eats bread every single day.
Positive Nutrition With Great Taste

Plus great taste, artisan quality, authentic baking styles

Clean labels act as Welcome Mats

Clean labels are welcome mats for customers to stop and look
There are challenges...

- Taste & Texture Impacts from Nutrition Optimization
- Operational Hurdles with Allergen Concerns
- Clean & Clear Label Transition

Bakery 3.0 Examples with Technology Enablers
Fortified Whole Grain Bread

Challenges:
- Meet nutritional requirements for Good Source of Protein & Whole Grains
- Add functional ingredients without taste impact
- Achieve light & fluffy texture
- Clean Label
- No new allergens

Tool #1: Enzymes to deliver improved whole grain taste, soft texture, and freshkeeping.

Tool #2: Non-PHO emulsifiers, sunflower lecithin, and cultured ingredients can replace many common No-No's

Tool #3: DHA & blended vegetable proteins for fortification

Tool #4: Flavor Modulators for masking of bitterness from whole grains & vegetable protein
Achieve

**Taste**
- Preferred Taste Profile
- Soft Texture
- Optimal Volume

**Nutrition**
- Protein & Whole Grain Claims
- Omega-3 Fortification
- Allergen Friendly – No soy or dairy
- Free From Claims

**Cleaner Ingredient Deck:**
- Removal of DATEM, SSL, and mono- & diglycerides
- Removal of calcium propionate
- Shorter Ingredient List

Sugar Reduced Cookies
Challenges:
• Reduce sugar without impacting taste
• No off-notes
• Optimal volume
• Soft & chewy texture

Tool #1: High intensity sweetener (Stevia) paired with flavor modulators to mask bitter & licorice notes.

Tool #2: Non-PHO emulsifiers & sunflower lecithin for optimal texture with a clean label.

Tool #3: Soluble fibers to build back bulk, viscosity, and mouthfeel.

Achieve

Taste
Optimal sweetness level
Chewy texture
Better Volume

Nutrition
Sugar & calorie reduction
Fiber Fortified

Cleaner Ingredient Deck:
• Natural sweeteners
• Removal of chemical sounding additives
Gluten-Free Bread

Challenges:
- Achieve texture & volume comparable to conventional bread
- No off-notes
- Match fat & sodium levels of conventional bread

Tool #1: Natural bread flavors & Flavor Modulators to mask musty off flavors from starches

Tool #2: Non-PHO & clean label texture systems to deliver a soft fluffy texture and expected volume.

Tool #3: Innovation in formulation base and processing to meet nutritional and texture challenges

Tool #4: Fermentation technology to replace chemical preservatives
Achieve

**Taste**
Optimal volume
Soft sandwich bread texture
Preferred flavor

**Nutrition**
Lower fat & sodium levels than other GF breads
Allergen Friendly
Free From Claims

Cleaner Ingredient Deck:
- Removal of DATEM, SSL, and mono- & diglycerides
- Removal of calcium propionate
- Shorter Ingredient List

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Clean Label Premium Donut
Challenges:
- Remove artificial ingredients without impacting taste
- Clean up label
- Formulate with “real” from the source ingredients while maintaining consistency

Tool #1:
Clean label texture systems for softness and freshkeeping without common no-no’s such as SSL and mono & diglycerides

Tool #2:
Non-PHO naturally colored & flavored toppings

Tool #3:
Cocoa extracts for a real chocolate claims & rich chocolate taste that delivers consistent taste & pricing.

Achieve

Taste
Rich chocolate taste
Soft texture
Visual Excitement

Nutrition
Natural Colors & Flavors
PHO-Free

Cleaner Ingredient Deck:
- Removal of SSL, and mono- & diglycerides
- Removal of sorbates
- Shorter Ingredient List
In Conclusion...

• Bakery 3.0 is all about delivery of authentic, healthy baked goods which meet consumer’s demand for better tasting products.

• Innovation is the key to achieve Bakery 3.0

• Working together, we can deliver Bakery 3.0